HANDBOOK OF PHONOLOGICAL DATA
FROM A SAMPLE OF THE WORLD'S LANGUAGES

A Report of the Stanford Phonology Archive

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220 Russian

220 01 p
[p-labiovelarized][60]
[p-velarized][61]

220 02 p-palatalized[01]

220 03 b
[b-labiovelarized][60]
[b-velarized][61]

220 04 b-palatalized[01]

220 05 t[03]
[t-nasal-release][62]
[t-lateral-release][62]
[t-labiovelarized][60]
[t-velarized][61]
[t-unreleased][63]

220 06 t-laminal-palatalized[04 05]
[t-unreleased-palatalized][06 63]
[t-laminal-nasal-release-palatalized][62]
[t-laminal-lateral-release-palatalized][62]

220 07 d[03]
[d-nasal-release][62]
[d-lateral-release][62]
[d-labiovelarized][60]
[d-velarized][61]

220 08 d-laminal-palatalized[04 05]
[d-laminal-nasal-release-palatalized][62]
[d-laminal-lateral-release-palatalized][62]

220 09 k[07]
[k-labialized][64]

220 10 k-palatalized[08 30]

220 11 g[07]
[g-palatalized][08 32 65]
[g-labialized][64]

220 12 t/s[09]
[d/z][66]

220 13 t/s-hacek-palatalized[10]

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[d/z-hacek-palatalized][66]

14 f[11]
[f-labiovelarized][12 60]
[f-velarized][61]

15 f-palatalized[49]

16 v[11]
[v-labiovelarized][60]
[v-velarized][61]

17 v-palatalized[49]

18 s[13]
[s-labiovelarized][60]
[s-velarized][61]

19 s-palatalized[14]

20 z[13]
[z-labiovelarized][60]
[z-velarized][61]

21 z-palatalized[14]

22 s-hacek-velarized[15]
[s-hacek-palatalized][33 67]

23 z-hacek-velarized[15]

24 x[16]
[x-palatalized][17 65]
[x-labialized][64]
[gamma][66]

25 m
[m-voiceless][68]
(free)
[m-labiovelarized][60]
[m-velarized][61]

26 m-palatalized[18]

27 n[03]
[n-labiovelarized][60]
[n-velarized][61]

28 n-laminal-palatalized[04 19]
[n-laminal-voiceless-palatalized][69]
(free)

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29 l-velarized[20 21]
[l-voiceless-velarized][70]

30 l-palatalized[05 20 22]
[l-voiceless-palatalized][70]

31 r-trill[23]
[r-flap][24 71]
[r-trill-voiceless][34 70]

32 r-trill-palatalized[23 25]
[r-flap-palatalized][24 71]
[r-trill-voiceless-palatalized][70]

51 i[26]
[iota][27 72]
[i-bar][73]
[iota-bar][28 74]
[i-bar-backed][29 75]
[i-bar-fronted][76]
[yod-trema/i-bar][77]

52 epsilon[35 40]
[e][41 78]

53 a-front[42]
[ash][79]
[alpha-unrounded][43 80]
[schwa][81]
[caret][45 82]

54 u[46]
[u-dot][83]
[upsilon][83]
[upsilon-dot][83]

55 o-mid[36 46]
[o-mid/o-open-glide][84]
[o-mid/schwa-glide][37]
(free)
[o-mid/yod][47 84]
[w/o-mid][84]
[yod/o-mid][84]
[o-dot][84]

56 yod[48]

220 $a Russian $b "contemporary standard" (Moscow-Leningrad educated speech) $d Slavic $e Soviet Union$f 150 million $g Merritt Ruhlen $g Marilyn Vihman (review)

220 $a Jones, Daniel and Dennis Ward $b 1969 $c The Phonetics of Russian $g Cambridge, England: Cambridge University Press

220 $a Halle, Morris $b 1959 $c The Sound Pattern of Russian $g The Hague: Mouton

220 $a **INTONATION** $A See p.217-247.

220 $a **LONG CONSONANTS** $a **LONG VOWELS (NON-DISTINCTIVE)** $A Long consonants occur initially and medially, and are treated as clusters of identical consonants by Jones and Ward. Only a few examples are given. (p.213, 214) Long affricates are analyzed as alveolar stop plus affricate. It appears that morpheme boundary is usually found between identical consonants, but this point is not discussed by Jones and Ward. Vowel length is not distinctive. Accented vowels are longer

than others. Unaccented vowels are lengthened somewhat in final open syllables and pretonically.

220 $a **MORPHEME STRUCTURE** $A initial CC: not /yod/ + C and liquid + liquid $A initial CCC: initial liquid not permitted $A initial CCCC: /f.s.t.r-trill-palatalized/ found in one morpheme $A final CC: not C + /yod/ and /yod/ + liquid $A final CCC: liquid + C + liquid not permitted (Halle, p.57)

220 $a **STRESS** $A Jones and Ward characterize Russian accent as stress accent, i.e. due to differences in force of articulation. (p.206-7) Pretonic syllables are more strongly stressed than other unstressed syllables. Position of accent is free (not phonologically determined) and alternates (mobile accent) in some morphological paradigms.

220 $a **SYLLABLE** $A (C)(C)(C)(C)V(C)(C)(C)(C) $A Based on Halle's morpheme structure rules; combinations due to prefixation and suffixation not taken into account.

220 $a **UNRELEASED STOPS (NON-DISTINCTIVE)** $A "The plosive consonants do not lose their plosions when followed by another heterorganic plosive or affricate.... When, however, two identical plosives occur together, there is only one plosion." (p.88) Only two examples are given, with [p-unreleased] and [t-unreleased]. It is not stated which other stops occur in such clusters. [JHC]

220 $a **VOICELESS VOWELS** $A Vowels may be devoiced between voiceless consonants in weakly stressed positions. (p.191f)

220 01 $A In articulating the palatalized labials, "the tongue is in the position for /yod/ throughout the formation of the consonant." (p.93) Between a preceding non-front stressed vowel and /p-palatalized/ or /b-palatalized/ a very short "i-glide" can be heard in cases where no off-glide occurs after the consonant (e.g. where the palatalized segment is followed by a nasal). (p.94) In producing /p-palatalized, b-palatalized/ before vowels other than /i/ "there is a slight glide...in the nature of a yod-sound," across word-boundary as well as within words. (p.63) Before pause and across word-boundary where a stop follows there is a very short voiceless fricative sound. (p.93f)

220 03 $A The alveolars are articulated with "tip of the tongue touching front teeth in angle formed by upper incisors and teeth-ridge; blade of tongue against forward part of teeth-ridge.... Some speakers...pronounce a purely dental [t, d] in which the tongue-tip touches the upper incisors...but the blade makes no contact with the teeth-ridge. A quite common alternative pronunciation of [t, d] is with the blade only, making contact with the front part of the teeth-ridge and roots of the upper incisors, while the tongue-tip is lowered to the roots of the lower incisors." (p.97-98)

220 04 $A The laminal alveolars are articulated with "blade of tongue against teeth-ridge and front of tongue close to front part of hard palate (the tip of the tongue is usually lowered, making contact or near-contact with the base of the lower front teeth." (p.103, 162)

220 05 $A In the articulation of the palatalized alveolar stops and lateral "all the articulating parts of the tongue reach their respective positions as nearly as possible simultaneously.... The closure made by the blade against the teeth-ridge is released just before the front of the tongue moves away from the hard palate. As a result of this the blade and front of the tongue are, for a fraction of a second, in a position similar to that for Russian /s-palatalized/, and a very short fricative element is heard.... In addition, a very slight [yod] glide will occur between the palatalized consonant and the following vowel." (Utterance finally, a very short voiceless [yod] occurs.) (p.104)

220 06 $A [t-unreleased-palatalized] is articulated with "tongue-tip touching the teeth-ridge and the blade against the back part of the teeth-ridge." (p.105) What is heard is a long stop, followed by the [s-hacek] release of the following affricate.

220 07 $A The velars are articulated with the "back of tongue against central and forward parts of soft palate." (p.109)

220 08 $A In articulating the palatalized velars, "back of tongue against central and forward parts of soft palate, front of tongue raised towards hard palate, middle of tongue usually touching rear part of hard palate."

220 09 $A "In forming the stop of the affricate [t/s, d/z] the tongue-tip is placed further back than for the position for Russian [t, d]...and on the release of the stop the blade adopts a position slightly more advanced than that for Russian [s]." "Tip of tongue and blade against teeth-ridge so that tip is slightly behind upper front teeth..., then tip and blade very slightly lowered and withdrawn from this position." (p.147) "Roughly speaking, each of the sounds [t] and [s] in [the cluster] /t.s/ occupies the same length of time as the whole of the affricate /t/s/. Conversely, this means that /t/s/ occupies roughly the same length of time as /t/ or /s/.

220 10 $A In articulating /t/s-hacek-palatalized/ one places the "tip of tongue at a point slightly

behind the mid-point of the teeth ridge, blade of tongue against teeth-ridge and fore part of hard palate, front of tongue being at the same time raised towards the hard palate.... There is probably slight lateral contraction of the tongue; the lower jaw is raised so that the lower teeth are almost or quite in contact with the upper teeth." (p.152) "The tip and blade of the tongue are...slightly lowered from the position of closure." (p.152) "Each sound of the sequence [t.s-hacek-palatalized] is roughly as long as the whole of the affricate /t/s-hacek-palatalized/.

220 11 $A In articulating the labiodentals one places the "inside of lower lip against upper front teeth." (p.119)

220 12 $A In articulating [f-labiovelarized] contact is made "slightly further down on the inside of lower lip [than for [f]] and there is no appreciable contact between lip and incisors. (p.119)

220 13 $A In articulating /s/ and /z/ one places the "blade of tongue near back part of teeth-ridge, without making complete contact; the tip of the tongue is either pointing towards the upper front teeth, lying under the middle part of the teeth-ridge, or is lowered to the base of the lower front teeth." (p.125)

220 14 $A In articulating the palatalized alveolar fricatives one places "blade of tongue near back part of teeth-ridge, without making complete closure; front of tongue simultaneously raised towards the hard palate; tip of tongue lowered to a position behind the base of the lower front teeth...or pointing towards the gap between upper and lower teeth." (p.129) "Before vowels, the constriction of the blade of the tongue against the teeth-ridge is released very slightly before that of the front of the tongue against the hard palate. The result is a slight yod-glide...." (p.129f, cf. p.132)

220 15 $A In articulating the palatoalveolar fricatives one places the "tip of tongue near back part of teeth-ridge, back of tongue raised, front of tongue being as far as possible flattened so as not to approach the hard palate." (p.133) "The lips are somewhat protruded." (p.133)

220 16 $A "There is very little friction in the Russian /x/.... At times the friction is barely audible." (p.143)

220 17 $A [x-palatalized] is articulated "slightly further forward than for the non-palatalized allophones." (p.144) "A greater area of the back of the tongue approaches the soft palate and front of the tongue is raised slightly towards the hard palate." (p.144)

220 18 $A In the articulation of /m-palatalized/ "the tongue is in the yod-position through the duration of the consonant." (p.157) The cue to the palatalization of the /m/ word-finally lies in the allophone of the preceding vowel or in the presence of an "i-glide" between the vowel and the nasal. (p.158) Before vowels other than /i/ a slight yod-glide occurs.

220 19 $A In the articulation of /n-laminal-palatalized/, before vowels other than /i/ a slight yod-glide occurs. Pre-consonantally "there is no appreciable glide" but before pause "a slight yod-glide is heard after the consonant." (p.163)

220 20 $A In the articulation of /l-velarized/ and /l-palatalized/ one places the "tip of tongue in angle formed by upper teeth and teeth-ridge; front of tongue hollowed and back of tongue somewhat raised in the direction of the soft palate." (p.167) "One or both sides of tongue lowered, so as to allow continous escape of air laterally, without friction." (p.167)

220 21 $A "The degree of raising of the back of the tongue is such as to give Russian /l-velarized/ a resonance approaching that of /o-mid/, though the back of the tongue may be raised slightly higher or even not quite so high." (p.168)

220 22 $A "The front of the tongue is in raised position throughout the whole of the Russian /l-palatalized/." (p.173)

220 23 $A In articulating the trills one places the "tip of tongue against middle of teeth-ridge." (p.176) "At the end of words...the number of taps is three or four normally. At the beginning of a word and before a consonant there are usually two taps." (p.177) "In all positions the number of taps may be increased...for special 'affective' purposes." (p.177)

220 24 $A In articulating [r-flap] "the tongue simply 'flaps' up to the teeth-ridge and makes a very brief contact with it." (p.177)

220 25 $A "A slight yod-glide is heard between /r-trill-palatalized/ and any member of the vowel phonemes /a-front/, /o-mid/, or /u/. The glide is also present when /r-trill-palatalized/ occurs before a consonant or at the end of a word." (p.185) "The i-quality must be heard continuously throughout the duration of the sound." (p.185)

220 26 $A high $A /i/ is "nearly close." (p.29) "Between two palatalized consonants in stressed syllables" /i/ is even higher. (p.31)

220 27 $A /iota/ is "retracted-front." "Some writers...would call this sound a 'lax' /i/." (p.36)

220 [28] $A "After the affricate consonant /t/s/ some speakers pronounce an even more open vowel approaching [schwa]. A similar sound may be heard in very weakly stressed syllables." "Some writers would call this sound a 'lax' [i-bar]." (p.38)

220 [29] $A [i-bar-backed] is "slightly diphthongized, beginning at a point...almost as far back as [i-trema]...and moving immediately towards the [i-bar-backed] position." (p.33) "The part of the tongue which is highest is at the back of the central area." (p.33)

220 [30] $A /k-palatalized/ contrasts with /k/ only before /a-front, o-mid, u/, where /k-palatalized/ occurs rarely, and almost exclusively in foreign words. (p.114)

220 [31] $A /g/ occurs only before /a-front/ and voiced consonants. (p.116)

220 [32] $A "In a very few loan-words, not in common use, [g-palatalized] occurs before other vowel phonemes [than /i/ and /epsilon/].... Thus there are grounds for considering [g-palatalized] to be a separate phoneme." (p.116)

220 [33] $A The sequence [s-hacek-palatalized.t/s-hacek-palatalized] is pronounced as a long palatalized [s-hacek] by many speakers. In this case [s-hacek-palatalized] is a distinct phoneme. Other speakers render the sequence as a long [s-hacek-palatalized] "interrupted" in the middle by a very slight [palatalized-alveolar] stop element." (p.139)

220 [34] $A [r-trill-voiceless] may also occasionally be heard at the end of a word after a vowel or a voiced consonant, usually however only when the word occurs before a pause.... Final /r-trill/ before a pause not infrequently becomes voiceless towards the end...; i.e. the vocal cords stop vibrating before the taps have finished." (p.182)

220 [35] $A /epsilon/ occurs only under stress.

220 [36] $A /o-mid/ occurs in foreign words, stressed or, more rarely, unstressed, without off-glide. (p.59, 61f)

220 [37] $A The lip-rounding of the glide in the diphthongal variants of /o-mid/ may be lost at conversational speed. (p.57)

220 [40] $A /epsilon/ is "often slightly diphthongal, moving in the direction of [schwa]." (p.41) It is slightly higher after palatalized consonants. (p.40)

220 [41] $A [e] "may be slightly retracted from a fully front position [especially] after.../s-hacek-velarized, z-hacek-velarized, t/s/." (p.43f)

220 [42] $A /a-front/ is articulated at "a point a little further back than centre of front." (p.46) "When...preceded by a soft [palatalized] consonant it is slightly advanced.... In these positions it is approximately cardinal vowel No. 4." (p.47)

220 [43] $A [alpha-unrounded] is articulated at "a point somewhat further forward than centre of back." (p.49)

220 [44] $A "There is some slight variety in the quality of [schwa] because of the influence of surrounding sounds. In positions before the stress when /r-trill/ follows, for example, the sound [schwa] often seems more caret-like in the pronunciation of some speakers. In post-tonic syllables, between two soft consonants, the sound [schwa] is often more i-like, [especially] if the following syllable contains the vowel /i/." (p.53)

220 [45] $A /caret/ is described as "an advanced back vowel." (p.50)

220 [46] $A The high variants of /u/ have "close lip rounding," the lower-high variants "nearly close lip rounding," and variants of /o-mid/ have "medium lip rounding," except for the unrounded portions of diphthongal variants. (p.55ff)

220 [47] $A In producing [o-mid/yod] "the off-glide must not be exaggerated so that the o-sound with 'i-glide' is replaced by a diphthong sequence [vowel, glide] of the type /o-mid.yod/, which also occurs." (p.57)

220 [48] $A "When.../yod/ occurs between two vowels...particularly...when the second vowel or both...are unstressed...the tendency in Russian is to reduce the motion of the tongue to a minimum...[so that, for example] the tongue does not nearly reach the i-position between the two [schwas]; a very slight raising and fronting of the tongue from the schwa-position is sufficient to produce a [yod]." (p.72)

220 [49] $A In articulating the palatalized labiodentals "the constriction of the lower lip against the upper teeth is released slightly before the tongue descends from the yod-position, thus producing a yod-glide before a following vowel." (p.121) Word finally there is a very short voiceless fricative sound. (p.93f, 121f) "The tongue is in the yod-position throughout the articulation of the consonant." (p.121)

220 60 $A Non-palatalized labial, labiodental, and alveolar obstruents and nasals are labiovelarized before /u/ and /o-mid/. No examples with /t/s/ are given. (p.79)

220 61 $A Non-palatalized labial, labiodental, and alveolar obstruents and nasals are velarized before the non-front allophones of /i/. (p.80)

220 62 $A Alveolar stops are released nasally before /n, n-laminal-palatalized/ and laterally before /l-velarized, l-palatalized/. (p.89, 99)

220 63 $A /t/ and /t-laminal-palatalized/ are unreleased before /t/s/ and /t/s-hacek-palatalized/ respectively. (p.149)

220 64 $A The velars are labialized before /u/ and /o-mid/. (p.79)

220 65 $A /g/ and /x/ are palatalized before /i/ and /epsilon/. (p.116)

220 66 $A /t/s/, /t/s-hacek-palatalized/, and /x/ are voiced before a voiced obstruent other than /v/ and /v-palatalized/ (p.149), but [gamma] is "restrictied to the juncture of closely bound words," as well as two loan words and their derivatives. (p.144)

220 67 $A /s-hacek-velarized/ is palatalized before /t/s-hacek-palatalized/. (p.140)

220 68 $A "A rare voiceless allophone [of /m/]...may occur at the end of a word after a voiceless fricative consonant." (p.155)

220 69 $A /n-laminal-palatalized/ is voiceless "rarely, at the end of a word after a voiceless consonant." (p.164)

220 70 $A The laterals and trills are voiceless word-finally after a voiceless consonant. (p.170, 174, 186)

220 71 $A The trills are realized as flaps intervocalically. (p.177)

220 72 $A /i/ is realized as [iota] "in unstressed syllables [after]...soft consonants.... It occurs initially only after a pause in speech, no matter how slight, or after a word ending in a soft consonant." (p.37)

220 73 $A /i/ is realized as [i-bar] "after dental, alveolar, [palato-alveolar] and velar [non-palatalized] consonants" in stressed syllables. (p.32)

220 74 $A /i/ is realized as [iota-bar] "in unstressed syllables...[when] preceded by a hard [non-palatalized] consonant, which may be the final consonant of a preceding word, provided that there is no pause between the two words." (p.39)

220 75 $A /i/ is realized as [i-bar-backed] after bilabial and labio-dental consonants and also after /l-velarized/. (p.33)

220 76 $A /i/ is realized as [i-bar-fronted] when both preceded and followed by an alveolar, palatoalveolar or velar, and following palatalized consonants. (p.33)

220 77 $A /i/ is realized as [i-trema-glide/i-bar] word-finally. (p.33)

220 78 $A /epsilon/ is raised when a palatalized consonant follows. (p.44)

220 79 $A /a-front, u/ are realized as [ash, u-dot] in stressed syllables between palatalized consonants. (p.48, 68)

220 80 $A /a-front/ is backed to [alpha-unrounded] after a non-palatalized consonant when /l-velarized/ follows. (p.49)

220 81 $A /a-front/ is realized as [schwa] in pre-tonic syllable after a non-palatalized consonant, and in post-tonic syllable. It cannot occur "immediately before the stress or as the first sound in a word or as one of a sequence of two vowels before the stress." (p.52)

220 82 $A /a-front/ is realized as [caret] only pre-tonically, either in the immediate pre-tonic syllable, or word-initially, or as one of a sequence of two /a-front/ or /o-mid/ vowels. (p.51)

220 83 $A In unstressed syllables /u/ is realized as [upsilon] between non-palatalized consonants and as [upsilon-dot] between palatalized consonants (p.69f); in stressed syllables it is realized as [u-dot] between palatalized consonants. (p.68)

220 84 $A Under primary stress in native words /o-mid/ is realized as [o-mid/o-open-glide] word-finally in open syllable, as [o-mid/yod] before a palatalized consonant, as [w/o-mid] in word-intital position or after labial or velar consonant, as [yod/o-mid] after a palatalized consonant, and as [o-dot] between palatalized consonants. (p.57)